

# Detecting Subsurface Fuel Contamination

**Company:**

Dakota Technologies, Inc. (DTI)

**Location:**

Fargo, ND

**Employees:**

10

**President:**

Greg Gillispie

**Project Officer:**

Bruce Nielsen  
AFRL Materials and  
Manufacturing  
Directorate,  
Tyndall AFB, FL

**SBIR Technology**

The subsurface at many Air Force bases in the U.S. and abroad is contaminated by fuels and solvents. An accurate site assessment is needed before clean-up procedures can be implemented. Traditional site assessment involves collection of discrete soil samples that are sent to an off-site lab for analysis. The process is time-consuming and expensive. DTI had previously developed innovative laser-sensing technologies to continuously measure contamination levels as an instrument probe was forced into the ground by heavy trucks. The ability to use smaller, less expensive "Geoprobe" machines that hammer the probe into the ground was needed to make the sensor technology more widely available.

Dakota Technologies won SBIR contracts to develop and demonstrate shock protection measures and to expand the range of chemical sensors. A versatile depth control module and a smaller laser-induced fluorescence spectrometer was also developed. DTI's time-resolved fluorescence technology can fingerprint contaminant types in real-time, making it

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relatively easy to differentiate between gasoline, jet fuel, diesel fuel, etc. This allows technicians to define the "big picture" quickly and at far less cost.

#### Company Impact

- DTI is currently involved in follow-on projects with the Air Force.
- In the first nine months since the end of the SBIR Phase II project, DTI has performed commercial service work valued at \$67,000 and sold \$21,000 in products.

The SBIR technology has also leveraged \$75,000 funding from the Department of Energy. The company is also negotiating a license agreement that will open new opportunities for commercial sales.

#### Company Quote

"The SBIR program has given DTI the opportunity to diversify our activities much faster than we could have otherwise. The technology developed during our various SBIR contracts has opened up several promising spin-off applications."

Greg Gillispie  
President  
Dakota Technologies, Inc.

## SBIR

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